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ITAI 2372

A03 Analysis of 2057 - Michio Kaku - The Body (Ep.1)

**Technological Predictions vs. Current Reality**:

**Compare the documentary’s predictions with the current state of healthcare technology. For instance, how close are we to realizing AI-powered robotic surgery, telesurgery, or AI for diagnostics and personalized medicine?**

* In my opinion, we are very close to realizing that thesis presented in the documentary, and probably have those technology by 2040, not even 2050. For example, there is an example of an AI interaction between a guy shaving his beard and talking to his AI mirror about his teeth in the supposed 2057. I can make an example of the current time that is similar to that scene: NVIDIA Clara Digital Health, which is a studio where you can create an environment to build an machine learning model for specific medical field that adapts to the patient personal data.
* Another example is a product from NVIDIA called Biopharma where researchers use collection of data from computing networks to generate new drugs, making curing cancer possible.

**AI’s Current Impact on Healthcare:**

**Discuss how AI is transforming healthcare today. How does the reality compare to the documentary’s future vision? Provide examples of AI applications in areas such as surgery, diagnostics, or patient monitoring, drawing from class discussions and credible sources.**

* Reality is getting closer and closer to Michio Kaku documentary. For example, in an AI event I attended at Rice University, it is predicted that by 2030, with the current rate of AI development, stroke emergency care workflow, in this example, will be significantly reduced by using AI to reduce redundancy in predicting stroke, which is the currently short staffed by most hospital.
* Another topic in AI development in healthcare is creating digital twin of glucose metabolism in T1D using Physiology-Informed AI technology. Diabetes is a serious long-term condition that occurs when the body cannot produce enough insulin or can’t produce insulin at all or can not use the insulin it produces. The digital twin will provide an easier testing space for doctors to apply therapeutic strategies on new arbitrary scenarios.

**Ethical and Social Implications:**

**Reflect on the ethical issues raised by these technological advancements. For example, how might brain chips or robotic surgery affect patient autonomy, privacy, or healthcare access? Connect these concerns to the broader ethical debates surrounding AI in healthcare, as covered in class.**

* In my opinion, the ethical debates and social implications is a never-ending drama, with multiple ethnic questions related, therefore I will pick one that I think is currently controversial:
* **In the case of testing AI advances using human, is it morally correct or incorrect ?**
* In my opinion, we have to ask ourselves, what is the ultimate goal of the action and would the result of that goal serve human kind for the better good. If OpenAI successfully puts a chip into a human brain and makes that paralyzed person to be active again, for his sake and his close social circle benefit, would that be a good thing for society? I think the answer would be yes and that would benefit the whole society, but there will always be trade-offs, trade-offs that are related to ethics and privacy, and THAT PATIENT will have to accept it, if he or she wants to be functional again, as will all of us, soon enough.

**Reference List**:

<https://www.youtube.com/watch?v=1vHBootsoIU&list=PLcsG4X8Zn_UD0RemNKIfjqunT50S59n9C&index=16>

<https://www.youtube.com/watch?v=99HLOQB2iGQ&list=PLcsG4X8Zn_UD0RemNKIfjqunT50S59n9C&index=11>

<https://www.nvidia.com/en-us/clara/>